DOCKET NO.: 220523US0PCT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

IN RE APPLICATION OF: GROUP: 2871

Makoto YONEYA, et al.

SERIAL NO: 10/070,908 EXAMINER: NGUYEN, H.

FILED: July 12, 2002

FOR: LIQUID CRYSTAL DISPLAY DEVICE

PRE-APPEAL BRIEF REQUEST FOR REVIEW

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Applicant requests review of the final rejection in the above-identified application. No amendments are being filed with this request.

This request is being filed with a Notice of Appeal.

The review is requested for the reason(s) stated on the attached sheet(s). No more than five (5) pages are provided.

I am the attorney or agent of record.

Respectfully Submitted,

OBLON, SPIVAK, McCLELLAND,
MAIER & NEUSTADT, P.C.
Norman F. Oblon

Stefan U. Koschmieder, Ph.D.
Registration No. 50,238

Customer Number
22850
Tel. (703) 413-3000
Fax. (703) 413-2220
(OSMMN 07/05)

DOCKET NO: 220523US0PCT

IN THE UNITED STATES PATENT & TRADEMARK OFFICE

IN RE APPLICATION OF	:	
MAKOTO YONEYA, ET AL.	:	EXAMINER: NGUYEN, H.
SERIAL NO: 10/070,908	:	
FILED: JULY 12, 2002	:	GROUP ART UNIT: 2871
FOR: LIQUID CRYSTAL DISPLAY DEVICE	:	

PRE-APPEAL BRIEF REQUEST FOR REVIEW

COMMISSIONER FOR PATENTS
ALEXANDRIA, VIRGINIA 22313

SIR:

Responsive to the Advisory Action of August 2, 2005, and the Final Office Action of May 18, 2005, Applicants request Pre-Appeal Review of the rejections in the above-identified application as set forth below in view of the Notice of Appeal filed concurrently herewith.

Remarks/Arguments begin on page 2 of this paper.

REMARKS/ARGUMENTS

Claims 1-21 are active in the present application. Claims 1, 3-7 and 21 are currently under active prosecution. Claims 2 and 8-20 are presently withdrawn from prosecution.

Applicants submit that the Office's final rejection of Claims 1, 3-7, and 21 as anticipated by Kim (U.S. 6,091,471) contains clear factual and legal errors that render the rejections improper and unsupportable.

The Office asserts that Kim discloses a liquid crystal display device having alignment layers wherein the pretilt angle is substantially 0° thus anticipating the present claims which require that the claimed liquid crystal display device has a pretilt angle of substantially 0° in all of the liquid crystal anchoring directions with respect to a corresponding substrate (see Claim 1 of the Request for Reconsideration filed on July 12, 2005; page 2, lines 4-17 of the Advisory Action of August 2, 2005; and page 4, lines 5-11 and page 6, lines 12-15 of the Final Office Action of May 18, 2005).

The Office cites to Figure 14 as support that Kim discloses a liquid crystal device having pretilt angles of substantially 0° (e.g., a liquid crystal display device meeting the requirements of present Claim 1). Applicants submit that Figure 14a does not disclose a liquid crystal display device having alignment layers wherein the pretilt angle is substantially 0° in each of the anchoring directions. Figures 14a-c show that an alignment layer (e.g., an anchoring direction) is subjected to a rubbing treatment (see column 8, lines 42-47 of Kim). As was established in this case, a rubbing treatment does not inherently provide a pretilt angle of substantially 0° (see page 10, lines 2-8 and Attachments 1 and 2 of the Request for Reconsideration filed on July 12, 2005). Thus Figures 14a and 14b show an alignment layer(s) undergoing a rubbing treatment that cannot provide a pretilt angle of substantially 0°.

The one-headed arrow in Figure 14c shows the direction of the pretilt angle. Applicants submit that it is readily recognized by those of ordinary skill in the art that the

depiction of pretilt angle by a one-headed arrow in the plane of an alignment layer indicates that the pretilt angle is not substantially 0°. Such arrows represent an overhead view of the alignment and provide information with regard to the pretilt angle, i.e., the pretilt angle is not substantially 0°. Therefore, a rubbing treatment does not provide an alignment having a pretilt angle of substantially 0° and the one-headed arrow representing the pretilt angle resulting from a rubbing treatment does not represent a pretilt angle of substantially 0°.

Applicants submit that it is readily recognized in the art that a pretilt angle of substantially 0° relative to a plane is shown by a two-headed arrow. The photoirradiated alignment layer shown in Figure 14d has a two-headed arrow. The pretilt angles of the alignments of domains I and II in Figure 14d are substantially 0° in this step of the process; however, not all of the alignment layers (i.e., each of domains I, II, III and IV) are concurrently photorradiated and hence each of the anchoring directions of the prior art device do not have a pretilt angle of substantially 0°.

Subsequent to the photoirradiation of Figure 14d, different domains of the prior art alignment layers are masked (see reference numeral 10 of the figures which indicates a mask) and then subjected to an oblique irradiation that is different from the perpendicular irradiation of Figure 14d (see Figures 14e and 14f). As shown in Figures 14e and 14f, the two-headed arrows indicating a pretilt angle of substantially 0° in domains I and II in Figure 14d become one-headed arrows in Figures 14e and 14f upon oblique irradiation. This indicates that the pretilt angle is not substantially 0° after oblique irradiation, i.e. the oblique irradiation results in an arrow showing a pretilt state (i.e., not substantially 0°) that is the same as the pretilt state caused by the rubbing treatment in Figures 14a and 14b which cannot be 0°.

The photoirradiation of Figures 14e and 14f is carried out at an oblique direction to the substrate. Photoirradiation from a different direction causes an alignment layer having having a pretilt angle of substantially 0°to change to an alignment layer having a pretilt angle

that is not substantially 0° (e.g., as evidenced by a two-headed arrow in Figure 14d). This is shown Figure 14e where the pretilt angle of domain I changes from a two-headed arrow to a one-headed arrow after oblique irradiation.

Similarly, Figure 14g shows two-headed arrows indicating pretilt angles of substantially 0° in domains III and IV. Subsequently, upon oblique irradiation of domains III and IV (i.e., the oblique photoirradiation shown in Figures 14h and 14i), the two-headed arrows in domains III and IV become one-headed arrows in Figure 14i indicating a pretilt angle that is not substantially 0°.

Accordingly, as is clearly shown in Figure 14i, all the domains I, II, III and IV have a one-headed arrow positively showing the pretilt angle that is not substantially 0°. Thus in the prior art device obtained by the process of Figure 14 of Kim, no domain has a two-headed arrow (i.e., none of the domains could have a pretilt angle of substantially 0°). Moreover, in no instance during the Kim process is a liquid crystal device formed where each of the alignment layers (e.g., each of the anchoring directions) have a pretilt angle of substantially 0° as presently claimed.

Thus, the rejection of the present claims as anticipated by Kim includes (i) a clear factual error; namely, the Office's assertion that Kim discloses a liquid crystal display device having a plurality of anchoring directions each having a pretilt angle of substantially zero, and (ii) a clear legal error; namely, the Office's rejection of the claimed invention as anticipated by a prior art reference that does not disclose all of the present claim limitations.

The Office provides a second argument as support for the anticipation rejection on page 2, lines 18-30 of the Advisory Action by citing to column 2, lines 45-57 of Kim which the Office appears in response to Applicants' arguments that Kim teaches away from alignment layers having a pretilt angle of substantially 0° in all of the domains (e.g., in each of the anchoring directions). The Office's argument in this regard is not comprehensible.

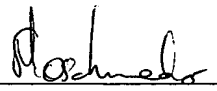
Applicants point out that it is explicitly stated in Kim that "the photo-alignment method has problems that the process is complicated due to the double exposure and the pretilt angle is too small". Therefore, Kim teaches away from small pretilt angles (e.g., a pretilt angle of substantially 0°).

The Office also appears to rely on Figure 4 as support that Kim discloses the claimed invention. However, Figure 4 (described at column 3, lines 51-54) does not disclose a liquid crystal display device having a plurality of in-plane anchoring directions as presently claimed (see lines 3 and 4 from the bottom of present Claim 1). Figure 4 merely describes the relationship of the pretilt angle to the exposure of photo-energy at a certain exposure level (see column 5, lines 27-32).

For the reason stated above, Applicants submit that the Advisory Action of August 2, 2005 and the Office Actions of May 18, 2005 and August 6, 2004 contain clear factual and legal errors and therefore the withdrawal of the rejections and allowance of claims is respectfully requested.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,
MAIER & NEUSTADT, P.C.
Norman F. Oblon



Stefan U. Koschmieder, Ph.D.
Registration No. 50,238

Customer Number
22850

Tel: (703) 413-3000
Fax: (703) 413 -2220
(OSMMN 06/04)
SUK/rac